REMARKS

The Office Action dated October 6, 2005, was carefully reviewed. The Examiner rejected claims 1-8 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,741,847 to Claxton et al., hereinafter Claxton in view of U.S. Patent No. 6,418,327 to Carey et al., hereinafter Carey.

The present invention is directed to receiving multiple channels in a receiver and the problem of the cost associated with separate receivers when a separate receiver is assigned to each channel. To accomplish the objective of digitizing a predetermined number of channels within a complete band of channels to simultaneously process more than one channel, the present invention teaches using multiple tunable bandpass filters for the particular RF channels to be processed. The filter outputs are then combined to form one signal for digitization. The desired channels are independently processed to provide usable signals to users. For example, more than one vehicle occupant may be listening to the radio, and they may be listening to different channels at the same time.

The present invention teaches summing only the desired signals filtered from the entire frequency band into one summed signal. Each of the desired signals is defined by a tuning a tunable bandpass filter to the desired frequency. Likewise, independent claim 6 requires filtering the analog signal into a predetermined number of desired frequencies and then combining only the desired frequencies into a single combined analog signal. In the embodiment described in Claim 8, undesired signals are filtered out and absorbed by tunable bandpass filters thereby preventing an overload of the receiver. One or more of the tunable bandpass filters

are tuned to one or more of the undesired channels to absorb the undesired signals. This significantly reduces the signal to noise ratio.

The Claxton reference is directed to improving bandwidth in a wireless telecommunications system. The Claxton reference discloses a frequency down-converter for a receiver in a wireless telecommunications system that simultaneously processes a plurality of signal channels over a relatively wide bandwidth. The Claxton reference teaches translating a frequency into a single, generally continuous composite band. However, the translation requires mixing and filtering the different signals and a local oscillator for each signal.

The Claxton reference does not teach or disclose summing only desired signals. The Claxton reference downconverts all high frequency signals, including desired and undesired signals, to an intermediate frequency, or baseband signal. The teachings of the Claxton reference do not distinguish between desired and undesired signals and therefore cannot possibly suggest selecting only desired signals for summation. In fact, Claxton teaches being "insensitive" to potential cross-channel interference. Being insensitive to interference implies rejecting interference, it does not teach or suggest receiving a predetermined undesired frequency and absorbing it as claimed in claim 8 of the present invention.

In contrast, the present invention teaches summing only the desired signals filtered from the entire frequency band into one-summed signals. Each of the desired signals is defined by tuning a tunable bandpass filter to the desired frequency.

The Examiner asserted that the Carey reference discloses a digital tuner that is able to process only the multiple desired signals from a digitized signal, as well as undesired signals. The Carey reference is directed to the problem of bandwidth limitations in wireless communications systems. The Carey reference proposes a flexible high-capacity wireless communication system that incorporates a sectored antenna system to provide two-way broadband data services. It is respectfully asserted that the Carey reference does not disclose a digital tuner and does not teach or disclose signal processing of desired and/or undesired signals.

To accomplish the objective, the Carey reference teaches a method for determining an optimized antenna radiation pattern that selects a radiation pattern for each sector, selects a sector width based on the radiation pattern, calculates a desired signal level in a first sector based on the radiation pattern for the first sector, calculates a sum of undesired interference levels in the first sector based on radiation patterns designated for sectors other than the first sector, calculates a ratio of desired signal level to the sum of the undesired interference levels, and modifies the first sector width to optimize the sector width.

The Carey reference teaches identifying and summing undesired interference levels in order to compare the sum to a desired signal level. The Carey reference does not teach or disclose filtering out undesired signals in order to sum and process only desired signals as taught by the Applicants of the present invention.

Carey teaches comparing the calculated sum of undesired interference levels to a desired signal level in order to select a radiation pattern for an antenna that will maximize a sector width for the antenna radiation pattern. The Carey reference

teaches using a signal-to-noise ratio as a guideline for engineering design of the optimum antenna radiation pattern in each sector of a wireless communication network, but does not teach or disclose processing desired signals and filtering out or absorbing undesired signals in order to improve the signal-to-noise ratio as taught by the Applicant of the present invention.

It is respectfully asserted that one skilled in the art would not look to combine the Carey reference with the Claxton reference as suggested by the Examiner. The Claxton reference is directed to simultaneously processing signals in a wireless telecommunications network and the Carey reference is directed to obtaining a maximized radiation pattern for an antenna in a wireless network. The Claxton reference teaches simultaneously processing multiple signals, but does not distinguish between desired and undesired signals. The Carey reference compares a ratio of summed undesired interference levels to a desired signal level in order to determine an optimum antenna pattern. Therefore, because the Claxton reference indifferent to desired and undesired signal identification, it is respectfully asserted that there is no motivation to combine Claxton with any reference that looks to distinguish between desired and undesired signal levels for signal processing purposes. There is no motivation to combine Claxton especially with the Carey reference, which teaches summing undesired interference levels to compare the sum with a desired signal level and is not directed to separating signals for signal processing of desired signals only and is not directed to simultaneously processing multiple signals.

Further, it is respectfully asserted that even if Claxton were combined with Carey as suggested by the Examiner, the combination would not result in the Applicants' invention. The Claxton reference teaches downconverting all high frequency signals, including desired and undesired signals, to an intermediate frequency, or baseband signal. The Carey reference teaches calculating a sum of undesired interference levels, comparing it to a desired signal level and optimizing an antenna radiation pattern based on the ratio of undesired interference levels to the desired signal level. The Carey reference does not teach or disclose filtering out undesired signals so that only desired signals are summed and processed. Therefore, even if the references were combined as suggested by the Examiner the combination would not result in the Applicants' invention which receives and combines only desired signals for signal processing and filters out or absorbs undesired frequencies.

Furthermore, the combination of Claxton and Carey would still result in Claxton requiring mixing and filtering the different signals and a local oscillator for each signal. All of which the present invention is designed to avoid.

It is respectfully requested the Examiner withdraw the rejection of claims 1-8 under 35 U.S.C. § 103. Should the Examiner have any questions or comments that may place the application in better condition for allowance, he is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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